

Today's Topics:

Antennas
Broadband Antennas
Getting serious about building.
New Icom Radios
Packet compression, what issue?
Packet radio BBS protection
RST
University Amateur Radio Clubs

Date: 19 Dec 89 14:55:53 GMT

From: snorkelwacker!usc!cs.utexas.edu!asuvax!hrc!godzilla!dalyb@tut.cis.ohio-state.edu (Brian Daly)

Subject: Antennas

Message-ID: <47853397.1423f@godzilla.UUCP>

In article <4781a78b.1423f@godzilla.UUCP>, dalyb@godzilla.UUCP (Brian Daly) writes:

> The far field is defined as the region where the antenna radiation patterns are
> independent of the distance from the antenna. This distance is roughly defined
> to be $D^2 / (\text{wavelength})$, where D is the width of the equivalent aperture,
> uniformly excited. When you see an antenna pattern diagram, this pattern is
> usually defined to be in the far field.

Just noticed I left out a factor of "2" in the equation for determining the
boundry
between the near and far fields; the correct equation is:

$$2(D^2) / (\text{wavelength})$$

Sorry for the error.

Brian Daly WB7OML

Date: 19 Dec 89 01:38:58 GMT

From: hpl-opus!hpnmdla!hpmwtd!timb@hplabs.hp.com (Tim Bagwell)

Subject: Broadband Antennas

Message-ID: <1260014@hpmwtlb.HP.COM>

Its no problem to broadband match to a dipole fed with parallel open wire
line (450-600 ohms) if you use a decent antenna tuner. I have a G5RV that
I can match from 80 to 10 meters. One small complication is that the
transmission line needs to be "tuned" to put the impedance within the range of

the tuner over the different bands. Since a good tuner has a fairly wide tuning range, its not hard to find the magic length empirically.

The problem with this approach is that the radiation pattern varies all over the place. For a full wavelength dipole or shorter, the pattern is the usual toroidal shape. As the wavelength gets shorter, sidelobes develop that rob power from the main lobe. Maybe this is desirable, maybe not.

Since at HF most of the noise is atmospheric, it seems to me that you want to have a low angle of radiation. A dipole is lousy in this regard since you pick up noise from the sky directly above you, but you dont find many useful signals there. Either a vertical or yagi improve this problem.

Another design that should work well is a horizontal loop where the circumference is less than a wavelength at the highest frequency of interest. By changing the configuration of the side opposite the feedpoint from being shorted to open, you can change the direction of maximum radiation.

de Tim, WB9MVP

Date: 19 Dec 89 16:47:21 GMT
From: pacific.mps.ohio-state.edu!zaphod.mps.ohio-state.edu!uwm.edu!
dogie.macc.wisc.edu!vms.macc.wisc.edu@tut.cis.ohio-state.edu (Brad Kleemann)
Subject: Getting serious about building.
Message-ID: <2844@dogie.macc.wisc.edu>

In article <7026@unix.SRI.COM>, henry@ginger.sri.com (Henry Pasternack) writes...

>
> Please forgive my previous ramblings. Lacking any gear, I thought it
>might make an interesting challenge to build some of my own. Two projects
>come to mind:
>
> 1) A synthesized 2 meter FM transceiver.
> 2) A low-band HF receiver / transmitter pair.
>
> Either project would do. If it's the 2 meter rig, I want a compact
>base rig with ten watts. If it's the low-band radio, I want to start
>with a basic double conversion receiver design in modular format so
>that I can later build it into a full-blown multi-band radio. CW only
>on transmit is fine for now, with a hundred watts or so of input power.
>Quality is the key, and money may not be an object.
>
> I have seen a few people ask for help on such projects, but no follow
>up. I have the means to do this project on my own, but I am interested in
>contacting people with experience in advanced RF design, so that I don't

>have to reinvent the wheel.

>

> I anticipate a certain amount of "If you're a beginner, why not go
>buy a quality used rig and save a lot of money" comments. This is not
>my intent. I am not a beginner, I know how to build equipment, and I
>want to get some hands-on experience with RF stuff. I am imagining the
>satisfaction of building an unpretentious HF CW rig with a hundred dB
>two-tone dynamic range and a six dB noise floor.

>

> Comments?

>

>-Henry

Henry:

A couple of suggestions; first get a-hold of Solid State Design
for the Radio Amateur_ by the ARRL, and possibly their book on
VHF/UHF construction techniques. I got mine from Amateur Electronic
supply in Milwaukee, they have several locations as well as mail-
order service. Second, make friends with someone who owns a
spectrum analyzer and possibly a sweep system. Ours is real
handy for that after-hours government work. Third, be prepared
to spend a LOT of time. I've played with cohn-type ssb crystal
filters for two years now, (making test jigs, building signal
generators with extremely fine tuning controls, building
broadband scope amps, writing computer simulations, debugging
computer simulations, rewriting computer simulations, running
computer simulations, sweeping the crystals to determine their
characteristics, rerunning the simulations, re-sweeping the
filters, etc.) and that's only a small part of a HF rig!

I've yet to run speech through one of these things to actually
determine what they sound like, but hopefully I will soon.

Til then 10 meters is fun on the club's Kenwood, even if I didn't
build it myself. Fourth, find someone who either has done this
before, or is interested. I've never met someone who has done
something like this, although K9MA has built our club linear.

I have an swl friend who is interested, and it's fun to work
on something with people. Fifth, either locate some good parts
sources or be prepared to spend a lot of money. (I do both)

Sixth, locate some good amateur technical literature. I like
QST, since it's available at the engineering library here at
the UW. So there you have it; time, money, knowledge, contacts
help, and equipment. Any three should suffice (I think)

--Brad

```
+-----+
|Brad Kleemann (kleemann@macc.wisc.edu) | WB9WHI |
|Madison Academic Computing Center      | Badger Amateur Radio Society (W9YT) |
+-----+
```

Date: 19 Dec 89 16:38:03 GMT
From: cs.utexas.edu!usc!chaph.usc.edu!girtab.usc.edu!cyamamot@tut.cis.ohio-state.edu (Cliff Yamamoto)
Subject: New Icom Radios
Message-ID: <7106@chaph.usc.edu>

Just got this off our local scanner BBS.

A copy of December's Japanese edition of CQ has an ad for two new Icom radios. The first is the IC-R1 100KHz - 1.3GHz, a tiny portable in the case of the new micro-sized amateur portables. The second is the IC-R100, a very small mobile receiver tunable from 100KHz - 1.856GHz. Both radios cover AM, FMW and FMN modes. The prices are listed at Y54,800 and Y84,800 respectively.

[Cliff again. I'll stop by my local Japanese bookstore for more info later]

Cliff Yamamoto

Date: Tue, 19 Dec 89 10:18:09 EST
From: ww@brambo.uucp (Warren W. Gay)
Subject: Packet compression, what issue?
Message-ID: <8912191018.AA19396@brambo.UUCP>

The whole idea of PREVENTING or legislating against data compression, is already and will become even more ridiculous, as time wears on. Look at the present situation:

With packet, what prevents me from sending *.ARC, *.ZOO, *.ZIP, *.LZW, *.PAK, *.GIF files that are possibly further UUENCODED or BSQed? Furthermore, consider the aspect of sending a program *.COM or *.EXE, which could include secret messages?

One could argue that it is not encrypted, except when the encrypt features of some of the archive utilities are used. Even without encryption, what use is it to monitor the traffic? Unless u get all of the data, intact, you cannot run the programs, and in many cases will not be able to de-archive the arc files! So monitoring is useless there.

If I send a picture in *.GIF format to a buddy, what prevents me from including a message in raster image format? Nobody else will likely see it, unless they were able to receive the entire file error free (monitors can't ask for retransmits). Even though its a raster image, it uses modified LZW, so the entire file must be had, to decompress the image.

So folks, if the government takes issue with data compression, then a lot of us are already in trouble. If the govt enforces a position against this (note that I have not said this is the case), then we are going to go back to the stone ages in packet radio... exchanging basic programs perhaps!

I have not checked into it here in Canada, and I'm not sure of the American issues on this either. But I'd be surprised if compression of data is an issue to them at all, in the final analysis.

```
--...  ....-- ...                               VE3WWG @ VE3RD : AX.25 PACKET RADIO
      Bramalea Software Systems Inc... !utgpu!telly \ !brambo!wwg
      !{uunet!mnetor, watmath!utai}!lsuc!ncrcan /
      utzoo!telly!brambo!wwg@ai.toronto.edu : Internet
```

Date: 19 Dec 89 09:05:44 GMT
From: zaphod.mps.ohio-state.edu!samsung!munnari.oz.au!comp.vuw.ac.nz!dsiramd!
pnamd!cstowe!len@tut.cis.ohio-state.edu (Len)
Subject: Packet radio BBS protection
Message-ID: <1682@cstowe.csoft.co.nz>

I think every Ham is the U.S should send two to three minutes of 'noise', just to piss off the N.S.A trying to decode these 'transmissions'. :-)

I was just wondering why the crypt/makekey stuff is 'under the control of the United States Government and cannot be exported without special licenses.'
As if any government hostile to the U.S would trust D.E.S.
Why does this kind of thing exist?
Would somebody please explain to me why this is so.

It is a pain in the arse for people who live outside of the U.S, who want to use unix features like dial-in passwords etc.

p.s I know there are work-arounds for these things, but It's still a pain.

Date: 19 Dec 89 17:13:44 GMT
From: zaphod.mps.ohio-state.edu!mips!wyse!steve@tut.cis.ohio-state.edu (Steve Wilson xtemp dept303)
Subject: RST
Message-ID: <2563@wyse.wyse.com>

In article <3169@cpoint.UUCP> wolff@cpoint.UUCP (Ken Wolff) writes:

> stuff deleted (along with the original posters sigs)
>>>Speaking of call signs, shouldn't stations be required to give their own
>>>call at least once per contact?
>
>I give the guy two QSO's to sign, then I either scream WHAT'S YOUR CALL or
>work him and scream WHAT'S YOUR CALL. I think everyone should do this to
>train the DX end to sign more often. BTW, we sign our call after every QSO
>in operations at my house.
>
>- Ken, K1EA

Just a quick point about IDing. The 10 minute/end of every contact rule is an FCC rule. This means it applies to us, not the DX stations. They may have similar rules(I don't really know) Your comments are certainly appropriate for US stations but don't necessarily apply to other countries.

73's de Steve KA6S

Standard Disclaimer - These are my opinions, not those of my employer.

Date: 19 Dec 89 17:30:33 GMT
From: usenet.ins.cwru.edu!cwsys2!dkazdan@tut.cis.ohio-state.edu (David Kazdan)
Subject: University Amateur Radio Clubs
Message-ID: <1989Dec19.173033.1375@usenet.ins.cwru.edu>

In article <9824.258DD331@stjhmc.fidonet.org> Jim.Grubs@f1.n234.z1.fidonet.org (Jim Grubs) writes:

>> From: cep4478@ulthb.isc.rit.edu (C.E. Piggott)

> >

> > I am trying my best to compile a list of amateur radio clubs at
> > colleges and universities around north america and the world. I'd

Try writing to W1MX, the MIT Radio Society. They may not have much in the way of written records, but there is an interesting wall of college station QSL cards that would at least be a starting point.

--David, AD8Y

End of INFO-HAMS Digest V89 Issue #1042
